

AVA-434.3 PCT.ST25.txt
SEQUENCE LISTING

<110> Avant Immunotherapeutics, Inc.
Sizemore, Donata
Tinge, Steven A.
Killen, Kevin P.

<120> Orally-Administered Live Bacterial Vaccines For Plague

<130> AVA-434.3 PCT

<140> PCT/US2004/

<141> 2004-12-09

<150> 60/528,140

<151> 2003-12-09

<150> 60/559,259

<151> 2004-04-02

<150> 60/573,517

<151> 2004-05-22

<150> 60/610,474

<151> 2004-09-16

<160> 14

<170> PatentIn version 3.3

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<212> DNA

<213> Yersinia pestis

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gttaacttta cagatgccgc gggatgaccc atgtacttaa catttacttc tcaggatgga	240
aataaccacc aattcactac aaaagtgatt ggcaaggatt ctagagattt tgatatctct	300
cctaaggtaa acggtgagaa ccttgtgggg gatgacgtcg tcttggctac gggcagccag	360
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Met Asp Asn Gly Asn Ile Asp Thr Glu Leu Leu Val Gly Thr Leu Thr
 35 40 45

Leu Gly Gly Tyr Lys Thr Gly Thr Thr Ser Thr Ser Val Asn Phe Thr
 50 55 60

Asp Ala Ala Gly Asp Pro Met Tyr Leu Thr Phe Thr Ser Gln Asp Gly
 65 70 75 80

Asn Asn His Gln Phe Thr Thr Lys Val Ile Gly Lys Asp Ser Arg Asp
 85 90 95

Phe Asp Ile Ser Pro Lys Val Asn Gly Glu Asn Leu Val Gly Asp Asp
 100 105 110

Val Val Leu Ala Thr Gly Ser Gln Asp Phe Phe Val Arg Ser Ile Gly
 115 120 125

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Val Thr Val Ser Asn Gln
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 aatagagtaa ttactgatga tatcgaattg ctcaagaaaa tcctagctta ttttctaccc 240
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 35 40 45

Lys Tyr Asp Pro Arg Lys Asp Ser Glu Val Phe Ala Asn Arg Val Ile
 50 55 60

Thr Asp Asp Ile Glu Leu Lys Lys Ile Leu Ala Tyr Phe Leu Pro
 65 70 75 80

Glu Asp Ala Ile Leu Lys Gly Gly His Tyr Asp Asn Gln Leu Gln Asn
 85 90 95

Gly Ile Lys Arg Val Lys Glu Phe Leu Glu Ser Ser Pro Asn Thr Gln
 100 105 110

Trp Glu Leu Arg Ala Phe Met Ala Val Met His Phe Ser Leu Thr Ala
 115 120 125

Asp Arg Ile Asp Asp Asp Ile Leu Lys Val Ile Val Asp Ser Met Asn
 130 135 140

His His Gly Asp Ala Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu
 145 150 155 160

Thr Ala Glu Leu Lys Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys
 165 170 175

His Leu Ser Ser Ser Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn
 180 185 190

Leu Met Asp Lys Asn Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys
 195 200 205

Ala Ser Ala Glu Tyr Lys Ile Leu Glu Lys Met Pro Gln Thr Thr Ile
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220

210

215

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Cys Ser Asp Lys Ser Arg Pro Leu Asn Asp Leu Val Ser Gln Lys Thr
 275 280 285

Thr Gln Leu Ser Asp Ile Thr Ser Arg Phe Asn Ser Ala Ile Glu Ala
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 gaattacttg ttggtacgct tactcttggc ggctataaaa caggaaccac tagcacatct 180
 gtttaacttta cagatgccgc gggatgaccc atgtacttaa catttacttc tcaggatgga 240
 aataaccacc aattcactac aaaagtgatt ggcaaggatt ctagagattt tgatatctct 300
 cctaaggtaa acggtgagaa ctttgtgggg gatgacgtcg tcttggtac aggcagccag 360
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 ccacaacatt ttattgagga tctagaaaaa gttagggtgg aacaacttac tggatcatggt 540
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 aaatatgatc ccagaaaaga ttcggagggt tttgccaata gagtaattac tgatgatatc 660
 gaattgctca agaaaatcct agcttatttt ctacccgagg atgccattct taaaggcgggt 720
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 ccgaatacac aatgggaatt gcgggcgttc atggcagtaa tgcatttctc tttaaccgcc 840
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gccagcgag agtacaaaat tctcgagaaa atgcctcaaa ccaccattca ggtggatggg 1140
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gcgttgggta atctgaaaaa ctcatactct tataataaag ataataatga attatctcac 1260
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 20 25 30

Met Asp Asn Gly Asn Ile Asp Thr Glu Leu Leu Val Gly Thr Leu Thr
 35 40 45

Leu Gly Gly Tyr Lys Thr Gly Thr Thr Ser Thr Ser Val Asn Phe Thr
 50 55 60

Asp Ala Ala Gly Asp Pro Met Tyr Leu Thr Phe Thr Ser Gln Asp Gly
 65 70 75 80

Asn Asn His Gln Phe Thr Thr Lys Val Ile Gly Lys Asp Ser Arg Asp
 85 90 95

Phe Asp Ile Ser Pro Lys Val Asn Gly Glu Asn Leu Val Gly Asp Asp
 100 105 110

Val Val Leu Ala Thr Gly Ser Gln Asp Phe Phe Val Arg Ser Ile Gly
 115 120 125

Ser Lys Gly Gly Lys Leu Ala Ala Gly Lys Tyr Thr Asp Ala Val Thr
 130 135 140

Val Thr Val Ser Asn Gln Glu Phe Met Ile Arg Ala Tyr Glu Gln Asn
 145 150 155 160

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Pro Gln His Phe Ile Glu Asp Leu Glu Lys Val Arg Val Glu Gln Leu
 165 170 175
 Thr Gly His Gly Ser Ser Val Leu Glu Glu Leu Val Gln Leu Val Lys
 180 185 190
 Asp Lys Asn Ile Asp Ile Ser Ile Lys Tyr Asp Pro Arg Lys Asp Ser
 195 200 205
 Glu Val Phe Ala Asn Arg Val Ile Thr Asp Asp Ile Glu Leu Leu Lys
 210 215 220
 Lys Ile Leu Ala Tyr Phe Leu Pro Glu Asp Ala Ile Leu Lys Gly Gly
 225 230 235 240
 His Tyr Asp Asn Gln Leu Gln Asn Gly Ile Lys Arg Val Lys Glu Phe
 245 250 255
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 260 265 270
 Val Met His Phe Ser Leu Thr Ala Asp Arg Ile Asp Asp Asp Ile Leu
 275 280 285
 Lys Val Ile Val Asp Ser Met Asn His His Gly Asp Ala Arg Ser Lys
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 340 345 350
 Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr Lys Ile Leu
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 Glu Lys Met Pro Gln Thr Thr Ile Gln Val Asp Gly Ser Glu Lys Lys
 370 375 380
 Ile Val Ser Ile Lys Asp Phe Leu Gly Ser Glu Asn Lys Arg Thr Gly
 385 390 395 400
 Ala Leu Gly Asn Leu Lys Asn Ser Tyr Ser Tyr Asn Lys Asp Asn Asn
 405 410 415
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420

425

430

Asn Asp Leu Val Ser Gln Lys Thr Thr Gln Leu Ser Asp Ile Thr Ser
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31

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<211> 31

<212> DNA

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<223> Primer V.R.Pst

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31